



DEPARTMENT OF THE NAVY

DIRECTOR NAVAL RESERVE INFORMATION SYSTEMS OFFICE

4400 DAUPHINE STREET
NEW ORLEANS, LOUISIANA 70146-5401

NAVRESINFOSYSOFFINST 5224.1A

N4

8 Feb 1999

NAVRESINFOSYSOFF INSTRUCTION 5224.1A

Subj: SOFTWARE PROCESS IMPROVEMENT

Ref: (a) Software Engineering Institute, Capability Maturity Model for Software, Version 1.1, CMU/SEI-93-TR-24
(b) Key Practices of the Capability Maturity Model, Version 1.1, CMU/SEI-93-TR-25H

Encl: (1) Software Requirements Management Guide
(2) Software Project Planning Guide
(3) Software Project Tracking & Oversight Guide
(4) Software Configuration Management Guide
(5) Software Contract Management Guide
(6) Software Quality Assurance Guide
(7) SPI Definitions, Abbreviations, and Acronyms
(8) SW-CMM Level 2 Verification Matrix
(9) Procedures for Project Reviews

1. Purpose. To establish policy for the Naval Reserve Information Systems Office (NAVRESINFOSYSOFF) Software Process Improvement (SPI) program. SPI program goals are to control costs, improve quality, and consistently meet schedules by using sound, mature business and engineering processes.

2. Cancellation. NAVRESINFOSYSOFFINST 5224.1

3. Background

a. The SPI program applies a standard Department of Defense (DoD) reference model for software development organizations, the Software Engineering Institute's Capability Maturity Model for Software (SW-CMM). Widely used throughout the DoD, the model is a comprehensive, long-term, proven methodology for improving organization effectiveness. It provides guidance for improving management processes to increase efficiency and mission contribution. Additionally, the SW-CMM provides a gauge for measuring an organization's software process capability and assessing the risk associated with the organization's products and services. NAVRESINFOSYSOFF established the program to improve the quality of our software products and services and to allow us to obtain software development and maintenance work that requires accreditation of our organizational processes.

b. NAVRESINFOSYSOFF's objectives in support of the SPI program goals are to achieve Level 2 of the SW-CMM, per references (a) and (b), and to maintain an organizational culture of continuous process improvement into the future.

4. Applicability and Scope

a. The scope includes all NAVRESINFOSYSOFF controlled software projects. This instruction applies to NAVRESINFOSYSOFF personnel engaged in projects and tasks to develop, maintain, convert, reengineer, or acquire computer software.

b. In addition to software projects, the SW-CMM Level 2 management principles shall be adopted and applied to all NAVRESINFOSYSOFF functions and activities whenever possible. These principles relate to the six Level 2 Key Process Areas (KPA) of the SW-CMM: Managing requirements, planning activities,

tracking, and overseeing progress against baselines, controlling configuration items, assuring quality products and services, and effectively managing contracts.

c. Software project personnel are to follow enclosures (1) through (6) of this instruction, which are process guides that address each of the six SW-CMM Level 2 KPAs. These guides are designed to establish standard organizational processes and to comply with all Level 2 requirements. Enclosures (7) through (9) of this instruction augment the process guides. NAVRESINFOSYSOFF personnel are invited to send comments and suggested process improvements to the NAVRESINFOSYSOFF Enterprise Process Engineering Group (EPEG).

5. Policy

a. All new software projects shall be planned and subsequently executed as SW-CMM Level 2, at a minimum, by adhering to the software guides in enclosures (1) through (6) of this instruction.

b. Progress against plans shall be reported in regular project reviews and through organizational process maturity profiles of projects and the NAVRESINFOSYSOFF activities.

c. All existing software projects or tasks shall develop and implement process improvement plans that reflect project priorities and the ability to implement processes per enclosures (1) through (6) of this instruction.

d. If a manager believes there are circumstances that prevent compliance with this policy, a waiver shall be requested per paragraph 7 below. This shall be documented and reflected in project assessments, IPRs, and normal project reviews.

6. Action

a. Executive Sponsors (ESs). The SPI ESs include the NAVRESINFOSYSOFF Director and Deputy Directors. ESs establish SPI-related policy and organizational implementation goals. They allocate resources to the program and provide high-level oversight. Executive sponsorship entails setting the SPI program priority within the organization and marketing process improvement outside the organization. The ESs resolve ESC deadlocks, should any occur.

b. NAVRESINFOSYSOFF Executive Steering Committee (ESC). The ESC comprises individuals from the senior management level and serves as the SPI management steering group. The committee sets strategic direction for the organization and provides supporting policy and guidance. The committee identifies and prioritizes organizational goals by aligning and allocating resources to accomplish the goals. It monitors process performance, goal accomplishment, measures of effectiveness, and customer satisfaction. Members build consensus and promote process improvement. The ESC charts the EPEG, appoints its members, and approves the group's work products.

c. Process Improvement Management Department (NAVRESINFOSYSOFF (N4)). This department is responsible for managing the SPI program and Maintaining SPI strategic and tactical plans. Other functions:

(1) Supports preparation of SPI program budget submissions for Program Objectives Memorandum (POM) build and budget exercises.

(2) Oversees and manages expenditures of funds for the SPI program.

(3) Facilitates the SPI activities of the ESC.

(4) Serves as the ESC Downlink to the EPEG.

(5) Collaborates on strategy, requirements, plans, and schedules and supports the activities of the EPEG.

(6) Develops and maintains a process asset library and software process measurement repository.

(7) Performs process quality audits, reviews, and statistical analysis.

d. EPEG. The EPEG is NAVRESINFOSYSOFF's focal point for building organizational consensus, integrating software processes, and institutionalizing process improvements. The EPEG is a standing group of specialists who facilitate the definition, maintenance, and improvement of the software processes used by the organization. In its continuing role, the EPEG:

(1) Establishes and maintains standard processes and improvements.

(2) Provides process consultation.

(3) Markets SPI throughout NAVRESINFOSYSOFF.

(4) Assesses software processes.

(5) Identifies measurement data.

(6) Develops plans, schedules, and priorities.

(7) Charters Technical Working Groups (TWGs).

(8) Guides and coordinates TWG efforts.

e. TWGs. A TWG is a project team having a specific assignment, project start date, and completion criteria. One or more EPEG members commit to guiding each TWG to keep efforts on track, coordinate with other SPI activities, and comply with the SW-CMM. A TWG is typically comprised of three to five individuals who are subject matter specialists or who work in the project subject area. They are a temporary team who disbands when their project is completed.

f. Department Directors. Directors are responsible for ensuring the compliance of their departments with this instruction and for the SW-CMM status of the department's projects. Additionally, they:

(1) Guide, support, and track the implementation of SPI activities within their departments to achieve NAVRESINFOSYSOFF SPI goals.

(2) Ensure members of the software project teams are trained to perform their SW-CMM related activities.

(3) Establish project management responsibility.

(4) Report status and progress to their superiors.

g. Project Managers. They are responsible for ensuring the compliance of their project activities with this instruction and for the SW-CMM status of their projects. Additionally, they:

(1) Plan, guide, support, and track the implementation of SPI activities within their projects to ensure achievement of NAVRESINFOSYSOFF SPI goals.

- (2) Adhere to enclosures (1) through (6) of this instruction.
- (3) Establish responsibility for each key project activity.
- (4) Report status and progress to their department director.

7. SPI Policy Waiver Procedures

a. Requests for waivers to NAVRESINFOSYSOFF's SPI policy shall be submitted by project managers to their department directors as decision papers. Waivers for new projects or contracts shall be requested within 30 days of project initiation. Waivers for current projects or contracts shall be requested within 90 days of the date of this instruction.

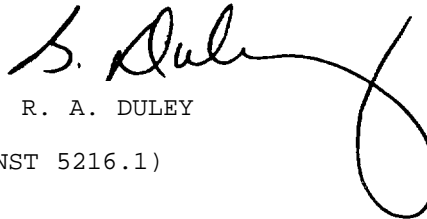
b. When the total project cost exceeds \$250,000, department directors shall review and forward waiver requests, along with recommendations, via the Process Improvement Management Department to the NAVRESINFOSYSOFF Director for approval. Department directors have approval authority for requests when the total project cost does not exceed \$250,000.

c. Waiver decisions or status shall be reported to the project manager 30 days after filing the waiver request with the department director.

d. Each waiver shall apply to only one project or contract. No blanket waivers shall be granted. Waivers may be requested for a single or multiple KPA.

e. Each waiver request shall contain justification or rationale for not implementing the standard management processes per enclosures (1) through (6) of this instruction. The request must identify what management processes shall be used in lieu of the processes presented above.

f. The cost and effort required for the waiver analysis and preparation of the request shall be commensurate with the size and value of the contract or project.



R. A. DULEY

Distribution: (NAVRESINFOSYSOFFINST 5216.1)

List A1

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